



2017 Stream Survey Report WEST BRANCH SHIOC RIVER

Rotation (WBIC 318900)

Shawano County

Prepared by Joe Dax

Introduction and Objectives

The West Branch of the Shioc River is a 15 mile stream with 3.5 miles of Class I trout water and 2.4 miles of Class II trout water in the upper reaches. The West Branch of the Shioc River originates north of Bonduel and flows south into the Shioc River. Seven public road crossing provide fishing access to the West Branch of the Shioc River and 4.6 miles of the stream falls within the Navarino Wildlife Area. Objectives of the rotation surveys are to determine species composition, relative abundance, and size structure for trout and other gamefish present.

Regulations Category: **Green**

Size Limit: Any length

Daily Bag Limit: 5 (in total)

WISCONSIN DNR CONTACT INFO.

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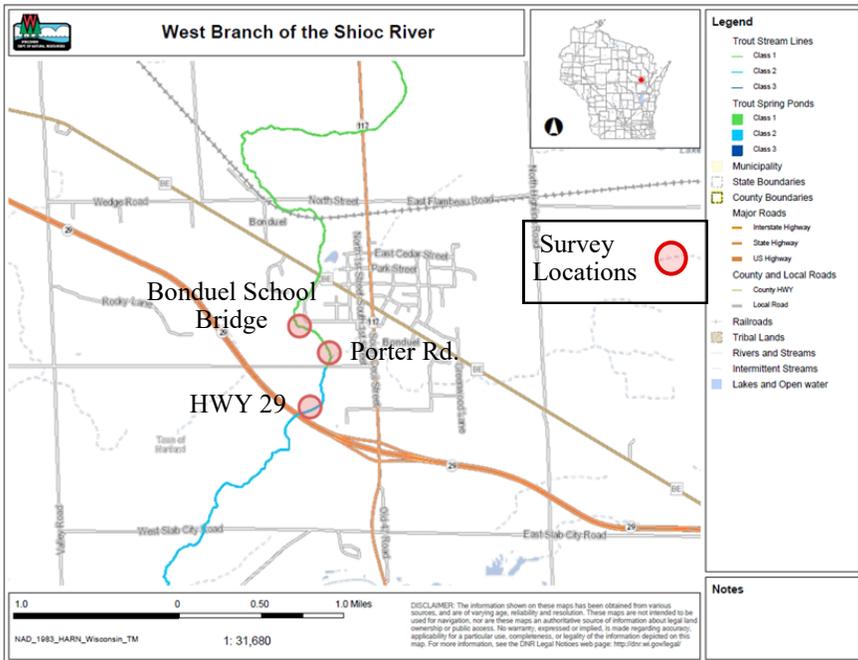
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Survey Information

Station	Survey Date	Station Length	Temperature (°F)	Mean Stream Width	GPS (Start/Finish)	Gear	Number of Netters	Index of Biotic Integrity
Hwy 29	06/28/2017	716 ft	55	19.9 ft	44.73042, -88.45583 44.73140, -88.45303	Tow-Barge Shocker	3	No
Porter Rd.	06/28/2017	330 ft	56	9.1 ft	44.73482, -88.45184 44.73557, -88.45133	Tow-Barge Shocker	3	Yes
Bonduel School Bridge	06/26/2017	336 ft	55	9.6 ft	44.73803, -88.45332 44.73813, -88.45442	Backpack Shocker	2	Yes



Survey Method

- All streams are sampled according to WDNR wadeable streams monitoring protocols. The West Branch of the Shioc River is on a 6 year rotation schedule with three sites identified for the segment of stream in Shawano County.
- All sampling stations are electrofished with either a towed barge shocker (pictured below) or backpack shocker.
- Sampling distance is at least 35 times the mean stream width or a minimum of 330 ft.(100 meters).
- All trout and other gamefish are measured for length and examined for fin-clips.
- In at least one stream segment (if multiple stations are being sampled) all fish species are collected and counted for calculation of an Index of Biotic Integrity (IBI).
- Metrics used to describe trout populations include average length, catch per unit effort (CPUE), and length frequency distributions.

Metric Descriptions

- Catch per unit effort (CPUE)** is a method of quantifying fish population relative abundance. For all trout surveys, we typically quantify CPUE as the number of a given size class of trout captured per mile of stream. CPUE indexes are compared to other trout streams throughout the state of Wisconsin by what percentile (PCTL) they fall out in. For example, if a CPUE is in the 90th percentile, it is higher than 90% of the other CPUEs in the state. CPUE percentiles can also be used to categorize trout abundance as low density (<33rd percentile), moderate density (33rd - 66th percentile), high density (66th - 90th percentile), and very high density (> 90th percentile).
- Index of Biotic Integrity (IBI)** is a rating of environmental quality based on the fish assemblage. Scores of 90-100 indicate excellent stream quality while scores less than 30 indicate poor stream quality. Our analysis utilizes the IBI for Wisconsin coldwater streams. Coldwater streams in Wisconsin are those in which the maximum daily mean water temperature is usually <22°C (71.6°F). A coolwater stream IBI may also be used when a stream doesn't fit the temperature criteria for a coldwater stream.
- Length frequency distribution** is a graphical representation of the number or percentage of fish captured by half inch or one inch size intervals.





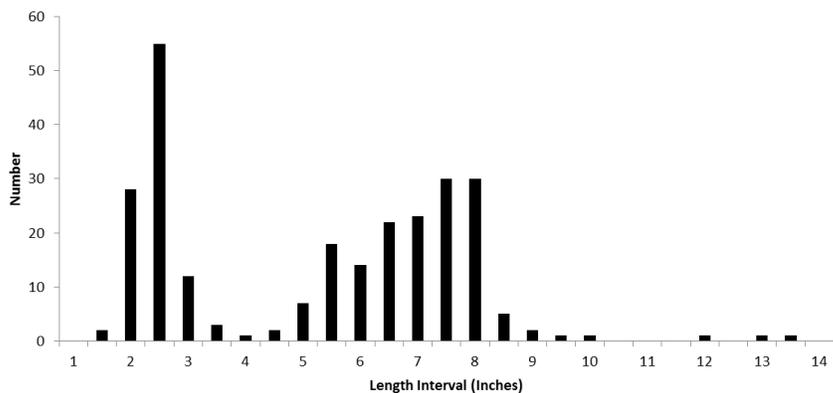
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Size and Abundance (CPUE) Metrics

Station	Species	Total Number Sampled	Average Length (inches)	Length Range (inches)	CPUE calculated as the number of trout of a given size per mile (Number in parentheses represents the statewide percentile of a given metric)					
					Total CPUE (PCTL)	YOY CPUE	≥5" CPUE (PCTL)	≥8" CPUE (PCTL)	≥10" CPUE (PCTL)	≥12" CPUE (PCTL)
Hwy 29	Brook trout	127	5.9	(2.2 - 13.6)	937 (86th)	346	581 (91st)	199 (96th)	29 (91st)	22 (99th)
Porter Rd.	Brook trout	63	5.8	(1.9 - 9.6)	1,008 (87th)	333	667 (93rd)	159 (94th)	-	-
Bonduel School Bridge	Brook trout	69	4.6	(1.9 - 8.4)	1,084 (88th)	500	547 (90th)	78 (84th)	-	-

Brook Trout Length Distribution, N = 259



Species Community and IBI for Bonduel School Bridge

Species Sampled	Total	IBI Score	Integrity Rating
BLACKNOSE SHINER	21	Coldwater: 80	Coldwater: Good
BROOK TROUT	69		
CENTRAL MUDMINNOW	7		
GREEN SUNFISH	19		
PUMPKINSEED	1		
RAINBOW DARTER	1		
SOUTHERN REDBELLY DACE	4		



Species Community and IBI for Porter Rd.

Species Sampled	Total	IBI Score	Integrity Rating
BLACKNOSE SHINER	2	Coldwater: 80	Coldwater: Good
BROOK STICKLEBACK	2		
BROOK TROUT	63		
CENTRAL MUDMINNOW	4		
GREEN SUNFISH	2		
LARGEMOUTH BASS	2		
NORTHERN PEARL DACE	1		
SOUTHERN REDBELLY DACE	7		
YELLOW PERCH	1		

Summary

- Overall, brook trout density in the West Branch of the Shioc River was high (> 86th percentile) at all three sites with 5+ inch CPUE in the 90th-93rd percentile at all sites as well. Additionally, density of brook trout > 8 inches was > 84th percentile for all three sites and brook trout as large as 13.6 inches were captured.
- Young of year (YOY) brook trout density was also found at high levels.
- The fish assemblage sampled in the West Branch of the Shioc River indicated a good coldwater environment.
- The West Branch of the Shioc River is a small isolated stream that has a good IBI score. However, the stream runs along the outskirts of the town of Bonduel as well as through some agricultural areas. Given its proximity to urban and agricultural areas, best management practices such as maintaining the current riparian corridors and preventing excessive nutrient runoff are needed to ensure the high quality environment for brook trout going forward.
- Efforts should be made to conserve the brook trout population in the West Branch of the Shioc River. This population is geographically isolated from all other trout populations in the area, making re-colonization following a significant perturbation unlikely.